

Analysis of Neutral Responses Using the MPEX More Than Just a Non-Response

Jared Saltzman

Dr. Matthew Price

Analysis of the MPEX tend to be focused on the categorization of student responses into one of three categories, favorable, unfavorable, and neutral. While in most literature centered around the epistemological views of students using surveys like the MPEX or CLASS disregard neutral due to it being considered a non-response we decided to focus our study entirely on the neutral responses. These responses were the focus of our initial study. We analyzed the post-test neutral responses from seven years of calculus based introductory physics courses at Ithaca College. In our initial study, we found that classroom average post instruction neutral responses fell within a band of 15%-25% and that this pattern was consistent with other published results. This lead us to further analyze our data collected to determine why the neutral responses fell within this range. We predicted that student responses were in this range for two reasons. One is that there were mixed messages being given to the students by instructors about what being a physicist is. The other is that we are measuring student attitudes towards physics during a transitioning phase where they are moving from novice like thinking to more expert like. These two predictions are indicated by examining all the questions asked on the MPEX. Certain items relate directly to what occurs in the classroom while others address the implications physics has on real world. To analyze the data further and to understand what is causing neutral responses to appear the way they do, we analyzed student responses to each individual item and compared them to other items on the MPEX. We also analyzed pre-test responses and ran linear regressions to determine if the student post neutral responses were affected by their pre-test responses and their instructors.